

# birmingham archaeology

Former Adamant Co. Works  
37-45 Commercial Street  
Birmingham

Building Recording and  
Documentary Record



Project No. 1448

**Former Adamant Co. Works**  
**Building Recording and Documentary Record**

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## **Former Adamant Co. Works, 37-45 Commercial Street, Birmingham**

### **Building Recording and Documentary Research, 2006**

#### **Summary**

*Building recording and documentary research was carried out in respect of the former Adamant Co. works, 37-45 Commercial Street, Birmingham city centre (NGR SP 0640 8632) for the Birmingham Development Company Limited. The work was undertaken to fulfil a planning condition attached to permission for the demolition of the existing buildings and redevelopment of the site, and was equivalent to an English Heritage level 3 record (2006).*

*The site was first developed in the 1850s as a foundry and continued to exercise this function down to the late 1880s when it became the premises of the Adamant Company, lime cement manufacturers. In 1895 the Birmingham architects Bateman and Bateman undertook to erect shopping at the site, and in 1897 the architect William Henman, also of Birmingham, was engaged to make alterations, which included the remodelling of the Commercial Street range.*

*The historical survey and recording exercise have revealed a complex building history. The earliest buildings were arranged around a courtyard at the eastern end of the site, and probably incorporated dwellings along the street front. Around the 1860s or 1870s the earliest of the buildings to have survived was erected to the west of the 1850s structures. This was a three-storey building with open arcade and brick vaulting at ground level, and it seems to have been intended as a free-standing structure. The map evidence suggests that this was part of a wider redevelopment which involved the replacement of the first buildings. By 1888 several more of the extant structures were probably already in existence.*

*The principal interest of the building complex is in the early use of concrete technology, the bulk of which probably dates from the 1890s. The main entrance block (Building A), which seems to have been remodelled by William Henman, incorporates pre-cast concrete panels used in conjunction with steel joists, and a flat concrete roof with asphalt covering. One of the other buildings retains concrete vaulting. The use of concrete at such an early date endows the former Adamant Co. works with a special significance as one of the key structures in Birmingham's architectural development.*

#### **1.0 Introduction**

Building recording and documentary research was carried out in respect of the former Adamant Co. works in Birmingham city centre for the Birmingham Development Company Limited. The work was undertaken to fulfil a planning condition attached to permission for the demolition of the existing buildings and redevelopment of the site, and was equivalent to an English Heritage level 3 record (2006). This recording exercise was carried out according to a written scheme of investigation prepared by Birmingham Archaeology which was itself based on a brief issued by Birmingham City Council. Personnel adhered to the standards of the IFA (2001).

## **2.0 Location** (Figs 1 and 2)

The former Adamant Works is situated on the north side of Commercial Street (Nos 37-45), Birmingham city centre, and on the south side of the Birmingham and Worcester Canal at NGR SP 0640 8632.

## **3.0 Objectives**

The principal objective of the project was to elucidate the historical and structural development of the complex, in its architectural and historical context and in relation to the relevant part of the West Midlands Regional Research Framework.

Others were:

- To produce a history of the building's ownership and development from documentary sources.
- To prepare an analytical written record of the buildings.
- To complete a drawn record of the complex.
- To obtain a photographic record of the buildings, their setting, fabric, fixtures and fittings.

## **4.0 Methods**

### Historical Research

A search was made of all readily available published and unpublished documentary sources, including historic maps and illustrations in Birmingham Central Library local studies and archives, the libraries of the University of Birmingham, and other appropriate repositories.

### Written Record

An analytical description was compiled on *pro forma* building and room record sheets, involving a systematic elevation by elevation, and room by room treatment. These field notes were used as the basis for the definitive account.

### Measured Survey

A measured survey was made, based on annotation and amendment of existing architectural drawings by Associated Architects, and on a new reflectorless total station survey of the front elevation to a standard equivalent to RCHME/English Heritage Level 3 (RCHME 1996/ English Heritage 2006).

## Photographic Survey

The photographic survey was carried out with a 35mm camera using black and white film and a photographic scale, and was supplemented by high resolution digital coverage. The survey consisted of both general external and more detailed internal photographs including fixtures and fittings. Photographs were recorded on *pro forma* register sheets indicating location, scales used, orientation, photographer and date.

## **5.0 Historical Development**

Cartographic evidence for the central Birmingham area is fortunately amply available and the earliest maps (Westley 1731, Bradford 1750 and Hanson 1778) depict how the expansion of Birmingham to the west of the old town centre was integrally tied with the development of the canal network. The Birmingham to Worcester canal, which is immediately adjacent to the study area, was built between 1791 and 1815. This coincided with the canal building boom in the Birmingham and West-Midlands area, as well as elsewhere in the country (White, 2005).

There was no direct connection from the Birmingham and Worcester Canal to the main Birmingham Canal Network (BCN) until 1814, as a physical barrier called the *Worcester Bar* separated the systems at the Gas Street Basin (best illustration of this is in the 1810 Kempson Map). The purpose of this barrier was to prevent the BCN from loosing water to their rival canal company's network. This meant that cargoes had to be hauled from one boat to the other, over the barrier at Gas Street Basin for a number of years.

This probably explains why the area around the Worcester Wharf was initially fairly slow to develop. Commercial Street, the properties of which would, after all, either back onto or front the wharf side, does not appear on the maps or in contemporary trade and corporate directories until the 1850s. Piggott Smith's pre-Commercial Street map of 1828 depicts the area as one of gardens orchards laid out on a gridiron pattern belonging to Miss Colmore (Fig. 3). However, although Commercial Street did not yet exist, its later position seems to have been determined by the layout of the gardens.

Commercial Street first appears in the cartographic record on the Piggott Smith's Board of Health map of 1848-62, by which time buildings had been erected in the study area (Fig. 4). The map shows a group of buildings arranged around a central courtyard, standing on their own and occupying the eastern half of the present site. The front (south) range was divided into four units, three of which had short rear wings within small rear (north) yards, and the appearance of a row of terraced houses. The fourth unit, which was slightly narrower and which had no appendages, may have been a covered entrance. Certainly, there is no other obvious access to the yard from Commercial Street. On the west side of the courtyard was a long narrow range, on the north side a much wider range, and on the east side a medium width range with a small annexe at the south end. The impression is of a collection of separate buildings rather than of a unified entity.

This complex of buildings was the Washington Foundry, which seems to have come into existence *c.* 1857. Commercial Street does not appear in the *PO Directory of*

*Birmingham* for 1856 but Richard Nash and William Allen are recorded as ironfounders with premises on nearby Washington Street. Nash and Allen seem to have relocated to Commercial Street by 1858 (Hulley's Birmingham Directory), when they were described as engineers, iron founders and stove grate manufacturers, carrying on their business at the Washington Iron Foundry, Commercial Street, Worcester Wharf. The new foundry is described in the 1860 rate book as being owned and occupied by Richard Nash and William Allen, and as comprising a foundry, steam engine, machinery, shops, yards and premises. A second entry for Nash and Allen land shows William Allen as the occupier of three separate units each comprising house and premises, and a fourth unit comprising show rooms and premises.

This layout had changed by the time of the Ordnance Survey 1:500 map of 1889 (Fig. 5), which shows an extended complex now occupying most of the present site. Described as the Washington Foundry ('Iron and Brass') it is shown as an irregular collection of buildings forming four ranges surrounding a courtyard containing a crane close to its northwest corner. There were covered carriage (east) and pedestrian (west) entrances from Commercial Street, but no access is shown to the canal wharfs which lay on the north side of the complex. Adjoining it to the east were some saw mills, and to the west was a large yard, entered from a gateway at the junction of Commercial Street (east) and Granville Street (west), and containing a smithy on its east side, adjacent to the Washington Foundry.

In the 1881 rate book William Henry Allen was the occupier of No. 9 Commercial Street, comprising house, show rooms, office, shopping, stabling, foundry, steam engine, machinery and premises. There is a second entry at the same address for shopping and premises. In 1882 W.H. Allen was listed at Nos 11 and 12 Commercial Street (Post Office Directory), and in 1883 two ironfounders are recorded on Commercial Street: William Henry Allen and William Allday, Son and Co. (Kelly's Directory). William Allen does not appear in Kelly's 1884 directory, but Allday is still listed, and in the rate book William Allday ('and Onions Company Ltd' written in a different hand) is recorded at Nos 9, 19 and 11 Commercial Street, with wharf land frontage, house, offices, warehouse, manufactory, engine and premises. He also owned houses at Nos 7 and 8.

No iron founders are listed on Commercial Street in 1888 (Kelly's Directory), but by 1890 Adamant and Co. Lim. Cement Manufacturers had appeared (*Ibid.*). In the 1891 rate book the Adamant Co. Ltd had engine and premises at No. 11 Commercial Street, owned by William Allday. The company also held wharf land and canal frontage from the Worcester Canal Company.

The appearance of a new type of business at the Commercial Street premises seems to have prompted two documented phases of building work. The first is the 1895 scheme for new shopping designed by Birmingham architects Bateman & Bateman<sup>1</sup> (BBP 10883; listed in the Birmingham Central Library Catalogue, with Adamant Co. as the client, but these plans were unfortunately missing). The manufactory was further

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<sup>1</sup> RIBA Archive reference: 1 PEOPLE LIBRARY; also Birmingham Central Library Archives: MS 1542 (catalogue of the Bateman & Bateman Archive)



altered and added to in 1897, by another Birmingham architect, William Henman<sup>2</sup> (1846-1917). Henman's plans are also listed in Birmingham Central Library Catalogue (BBP 13378), but these too are missing, but copies obtained in the 1990s was supplied by the client (Figs 6-10).

It is clear from a detailed comparison of the 19<sup>th</sup>-century maps and Henman's plans that a major reconstruction of the site took place between 1888 when the 1:500 Ordnance Survey map was surveyed, and 1897, when Henman's plans were drawn up for the Birmingham Adamant Co. Limited. This reconstruction took place shortly after the change of use from foundry to cement manufactory, and it is probable that Bateman and Bateman remodelled the site in order to accommodate the new business, a process that was furthered by Henman. Henman's drawings, which comprise a block plan, four floor plans, and two sections, show the layout of the factory in detail. Unfortunately, it is not certain whether they represent the factory as it existed at the time, or whether they illustrate Henman's proposed alterations. In many respects, it is evident that the present layout corresponds very closely with Henman's plans, the main area of discrepancy being the south front, where the configuration recorded on the 1897 plans is different from that of the existing elevation, in particular, the pattern of openings.

In Henman's drawings, access to the manufactory was from three carriage entrances and one pedestrian entrance. The latter led into a small vestibule, and then the office, which had walk-in stationery cupboard and safe at its north end. A staircase on the east side of the office ascended to the first floor. Next to the staircase towards the east, a carriage entrance led over a weighbridge to a covered yard with an oblique northwest angle, formerly part of the open yard of the 1850s foundry. This yard communicated with an eight-stall stable in the southeast corner, and, along the east side of the site from south to north, a feed room, loose box and harness room.

The yard was open to the north where there was a large storeroom, and to the northwest where there was an open yard with first-floor level galleries on the south and west sides, and a bridge extending from the south gallery to a platform and entrance on the north side. On the south side of the yard at ground level was a trap house, on the west side a mixing mill, and on the north side the boiler room (west) and a mill (east), and, beyond the boiler room to the north, an engine room.

The other two carriage entrances were situated towards the west end of the street front and to the west of centre. They both led into a large open area, the easternmost part of which had a raised floor level or 'deck', with only the carriage entrance at the lower level. This area was probably a despatch warehouse, being adjacent to the packing warehouse which lay in the northwest corner of the site, and which was also at two different levels. The packing warehouse communicated with the sand mill, which occupied the north range, and which was also accessible from the mill to the south.

The office staircase ascended to a vestibule at first-floor level labelled 'enquiries' on Henman's plan, with a hatch in the west wall communicating with an office, and a door on the south side leading into the board room, which lay directly above the

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<sup>2</sup> RIBA Archive reference: 32/C7, 115/D (Henman is best known for his design for Birmingham Childrens' Hospital (1892))

ground-floor office. A second door in the north wall of the board room opened to the first-floor office, also accessible from the east. On the east side of the staircase was another office ('spare office'). To each side of this block of offices was a large open area labelled 'modelling shop', each of which was entered from the gallery along the south side of the open courtyard. Above the mixing room, on the west side of the courtyard, was a mill room, and on the north side of the courtyard store rooms, reached by a bridge extending from the gallery on the south side of the yard.

The only second-floor level accommodation was a second mill room on the west side of the courtyard. Most of the roofs were pitched, but the roof over the front range was flat, being described as 'concrete', as well as being asphalted.

The new arrangement, as shown on the Henman plans, appears on the 1904 Ordnance Survey map (Fig. 11), and continues virtually unchanged up to the 1937 edition (Fig. 13), by which time the courtyard was still unroofed. By 1911 (Kelly's Directory), the company had become Adamant and Asphalte Ltd, plaster makers, and indeed seems to have gone through various guises and slight name changes. By 1932 the works occupied a site on the south side of Commercial Street (Kelly's Directory). Two separate engineering firms (Tilghman's Air Compressor Co. Ltd and Tilghman's Patent Sand Blasting Co. Ltd.) appear to have taken over the old premises on the north side of the street, which were given over to a number of similar businesses until the 1990s.

## **6.0 Description (Figs 14-21)**

The description begins with the front and rear elevations facing respectively towards Commercial Street and the canal. The front elevation forms a single entity, whereas the rear elevation is an amalgam of three main structural phases. Altogether, seven principal structural components (Buildings A – G) have been identified as a result of the historical research and recording work, and these will be dealt with individually under the description of the interior.

### **Exterior**

#### Front (South) Elevation (Fig. 14, Plates 1 and 2)

The Commercial Street elevation, which is all part of Building A, dates from 1897 or immediately afterwards on the grounds that it does not correspond with Henman's plan of that year, yet belongs stylistically to the turn of the 19<sup>th</sup>/20<sup>th</sup> centuries. It is of two stories with blue brick-coped plinth, wide mid-height fascias defined by brick dentils and cyma-recta moulded strings, brick dentilled and moulded terracotta cornice, and stone openwork parapet. The front is articulated vertically by pedimented pilaster buttresses into ten bays containing semi-circular-arched windows, mostly two, but in some cases three to a bay. The 19<sup>th</sup>-century openings generally survive, with arches springing from moulded imposts, and either of moulded plasterwork, or of two tiers of red (inner) and brick (outer) voussoirs, depending on their position within the composition. Most of the original plate glass sashes, however, have been replaced.

Although first impressions are of a unified and regular composition, it soon becomes apparent that the elevation incorporates a number of separate and symmetrical elements, described here from left (west) to right (east).

Firstly, a three-bay block with central segmental-arched carriage entrance containing a late 19<sup>th</sup>/early 20<sup>th</sup>-century boarded two-leaf half-glazed door, modified by the insertion of a steel pedestrian door. The bays to either side have been remodelled in the mid to late 20<sup>th</sup> century. The fascia over the carriage entrance is highlighted by flanking pedimented pilasters on moulded imposts, and, at first floor level, the central windows have moulded plaster arches, whereas those to each side are plain.

Next, another three-bay block with central wide segmental-arched window flanked by two pairs of doorways, recessed under plastered segmental arches. Like the adjoining western block, the differentiation of the centre bay is continued above by the pedimented pilasters on moulded imposts that flank the fascia, and by the moulded plasterwork of the first-floor window heads.

Then, an arrangement of window bays in the rhythm of 3:1:2:1:3, the single windows piercing the pilasters. At ground level, a central vehicular entrance, now fitted with a late 20<sup>th</sup>-century roller shutter, is flanked by a pair of pedimented segmental-arched doorways set within the pilasters. In the left-hand (west) bay are a door and two windows, all with segmental arches, in the right-hand (east) bay three short windows, also with segmental arches.

Lastly, an odd two-window bay with half-pedimented corner pilaster.

#### Rear (North) Elevation (Fig. 15, Plates 3 and 4)

The north elevation towards the canal is divided into three elements: a two-storey, five bay range to the left (east) (Building D), a taller three-storey gabled wing to the centre (Building C), and a single-storey, four bay hipped roof wing to the right (west) with louvre extending back along the full length of the ridge (Building B).

*Building D*: The north elevation has been rebuilt in the late 20<sup>th</sup> century in red brick laid in English bond with blue brick dressings to the openings. Ground floor level was originally high above the wharf corresponding with the higher level of Commercial Street, but during the reconstruction of this side of the building, a wharf level storey was inserted below the former ground floor.

Below buildings B and C, at wharf level, are the preserved remains of a 9 in x 4¼ in x 3 in red-brick wall laid in mixed bond and dating from the mid-19<sup>th</sup> century (Plate 5). This wall has a series of pilasters along its length, and was, presumably a retaining wall for the higher ground to the south. The wall has been carried up as the north walls of buildings C and D.

*Building C*: A later 19<sup>th</sup>-century building constructed in 9 in x 4½ in x 3 in red brick laid in Flemish garden wall bond. At Commercial Street ground level, is a wide central semi-circular arched doorway with two tiers of brick voussoirs, apparently

converted from a window, similar to the single windows on each of the upper two storeys, which have semi-circular arches and small-pane metal-frames.<sup>3</sup>

*Building B*: A later 19<sup>th</sup>-century building abutting constructed of dark red brick laid in random bond. At Commercial street ground level are two pairs of 19<sup>th</sup>-century segmental arched windows containing 20<sup>th</sup>-century wooden cross frames.

## **Interior**

### Building A (Entrance Block)

Building A comprises the entrance block facing towards Commercial Street, of which the façade has already been described.

### Basement (Fig. 15)

The basement dates from the later 19<sup>th</sup> century and adheres to the outline of Henman's plan, though a number of divisions have obscured the original layout. Essentially there were two main areas, the smaller of which lay to the east directly under the ground-floor office, and the larger of which lay to the west directly under what has been identified as a despatch warehouse. Access into the smaller cellar is still from a stair against the east wall. Henman also shows a stair giving access to the northeast corner of the larger cellar, adjacent to a chute, but of these features there is now no trace. Also in the larger cellar, there is a series of square-sectioned piers with bullnose brick corners and other projections for supporting the columns that formerly existed at first-floor level. Like the columns above, these piers may have carried timber beams, but a number of later brick piers have been inserted to support rolled steel I-beams, which now carry a concrete panel ceiling.

### Ground Floor (Fig. 16)

A number of elements are still recognizable from the Henman plan. Amongst these is the office (G15) which retains its chimney breast to the west, and, to the north, the stationery cupboard (G17), now converted to a kitchen, and the safe (G16), now converted into a lavatory. The former entrance to the room from the vestibule has been blocked, and access is now solely from the adjacent carriage entrance (G3) via an inserted door. To the north of the office is Henman's trap house, whose entrance from the former open yard has been blocked, and one inserted to the east.

The arrangement at the east end of the block also resembles Henman's plan, with its covered yard giving access to a series of equestrian compartments. The least altered of these is the former stable (G1) in the southeast corner, entered from the north via a doorway with bullnose brick corners. The rooms has been partitioned by the insertion of a breeze block wall to former a western pedestrian passage between a entrance in the front elevation to an inserted doorway in the north wall of the former stable. This inserted doorway cuts a blocked segmental-arched window. Within the stable itself is a single row of three cylindrical cast iron columns with moulded capitals (Plate 6), which denote the former division of the east end of the room into four stalls.

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<sup>3</sup> Such a window is shown on the Associated Architect elevation of 1999, used as a basis for Fig.15.

Henman's plan suggests a corresponding row of stalls at the west end, but of these there is no indication.

The other three rooms connected with the keeping of horses (the feed room [G5], the loose box [G6] and the harness room [G7]) have not survived so well, having been opened out by the removal of their front and dividing walls. However, the general arrangement recorded by Henman can still be discerned. One piece of interesting structural evidence concerns the relationship between the stable and the feed room to the north. The feed room is of an irregular shape, having a canted southwest corner, so contrived to accommodate the position of the stable doorway. This wall abuts the eastern pilaster of the doorway (Plate 7), showing it to be structurally later, though whether this has any significant implications for the development of the site is unclear.

At the west end of Building A is a large open area much like the arrangement depicted by Henman (G14). Set into the floor at the north end is an Avery weighbridge. The east wall is a later insertion, and the west wall contains a series of blocked segmental-arched windows. Two north-south aligned 20<sup>th</sup>-century rolled steel I-beams and a pair of earlier, possibly late 19<sup>th</sup>-century riveted I-section props carry a concrete panel ceiling (Plate 8). This arrangement, however, does not correspond with Henman's plan which depicts two rows of three columns each. Between this section and the offices, the space latterly occupied by a photographic studio has been divided by 20<sup>th</sup>-century partition walls, and the original arrangement is very much obscured.

### *First Floor* (Fig. 17)

The first-floor offices were reached from the staircase adjacent to the ground floor office now entered directly from Commercial Street (G4). The stone staircase is rather plain, although the steps have moulded lips (Plate 9); over the landing (F12) there is a plaster ceiling with moulded surround. The office layout shown by Henman is still recognizable, with the board room (F14), office (F13) and spare office (F9) still distinct entities although there have been some alterations as a result of their conversion to sound studios, including the conversion of the lavatory on the east side of the office to a corridor. These rooms all seem to have concrete panel ceilings. Something of the nature of the structure is revealed by gaps in the ceiling. The concrete panels are slotted into a network of steel joists. Once the panels were in place, concrete was poured over the top and then sealed with asphalt. A sample of the concrete showed a rather crude concoction with a clinker-based aggregate (Plate 10).

The whole of the area to the east of the offices (F8) was described by Henman as a modelling shop. Latterly divided into sound studios, most recently the area has been opened out again to a large extent, and there are few significant features. A north-south wall dividing the northern half of the area is made of breeze blocks but incorporates two bullnose brick piers, the positions of which correspond to items shown on Henman's plan. They stand directly above the west wall of the ground level feed room, loose box and harness room. This area too is ceiled with concrete panels.

The western half of the first floor (F3) was also given over to a modelling shop in Henman's plan. As on the ground storey, the west wall contains a series of blocked segmental-arched windows. At the north end of the room is a pair of brick pilasters

which carry the ends of two rolled steel I-beams, with steel supports of similar character at the centre. These in turn support a ceiling of concrete panels. Glimpses of similar steel supports have been gained in the former photographic studio (F3). Again, it should be mentioned that this arrangement does not correspond with Henman's drawings which depict rows of three columns, the section apparently showing cylindrical columns with capitals supporting wooden joists.

### Building B (Plate 11)

The packing warehouse of 1897, Building B contains a single room (G13) open to the roof, which is hipped at both ends. The painted brick walls are articulated on the west side by a series of piers dividing the wall into five bays corresponding with the roof bays, the trusses of which are supported on the piers, the east ends of the tie beams being embedded in the west wall of Building C, which predates it. The north wall is pierced by two pairs of segmental-arched windows, and has a central pier supporting the beam tying in the northernmost tie beam to the wall. The south wall also has a central buttress, serving a similar function, but this has been truncated by the insertion of a vehicular entrance. Otherwise, the wall was divided into three bays by two other piers. The eastern bay has also had a large opening inserted, but the western bay contains a blocked segmental-arched doorway. The roof is hipped at both ends and consists of a series of tie beam and principal rafter trusses with a pair of raking struts extending from the centre of the tie beam to the principals, and an iron rod in place of a king post (Fig. 21, Plate 12). A significant feature of the trusses is that the centres of the tie beams are fitted with iron collars which act as anchors for the struts and king post. The roof is of late 19<sup>th</sup>-century character, and the Ordnance Survey 1:500 map suggests that it might have been in existence by 1888.

### Building C

#### Ground Floor (Fig 16)

At ground level (G12/G22) the east elevation comprised nine bays of brick segmental arches (Plate 13) carried on iron square-sectioned panelled columns with square abaci, each supporting an iron *tas-de-charge* to meet the arches (Plate 14). The first and sixth arches from the south have been blocked with bricks. Inside, behind the brick arches is a series of tunnel vaults springing from iron joists bolted to flanges at the backs of the columns (Plate 15). The west ends of these are supported on brick piers with bullnose brick corners, ranged against the west wall. In the south wall is a blocked segmental-arched window (east) and a blocked full-height doorway (west), probably an insert. In the centre of the north wall is the former window, now a doorway.

#### First Floor (Fig. 17)

The first floor (F5/F18) was lit by segmental-arched windows, now blocked, towards the east. It was an open plan storey, though much of the detail at the south end has been obscured by the later 20<sup>th</sup>-century cladding that accompanied its conversion into a photographic studio.

### Second Floor (Fig. 18)

Also an open plan storey (S5/S6) lit by segmental-arched windows to the east (Plate 16), with wooden board floor and late 19<sup>th</sup>-century composite roof comprising iron rod tie beam, raking struts and king post, held in tension beneath timber principal rafters (Fig. 20, Plate 17).

### Building D

Building D, which contained the ‘Sand Mill’ on Henman’s plan, abuts the east wall of Building B and must therefore be later. The western portion of the south wall is formed by the north wall of Building E, which is abutted by the eastern portion, thereby suggesting that Building D is later than either Building C or Building E. Confirmatory evidence of the relationship with Building E is offered by a number of blocked windows in the south wall, which forms the north wall of Building E (Plate 18). The interior of Building D was given over to a single room (G21) open to the roof. Henman depicted furnaces in the eastern half and a copper at the east end. There were also double doors in the centre of the north elevation, presumably for the ingress of raw materials via Worcester Wharf. Few significant features survive except the roof structure which appears to be original, that is to say, of later 19<sup>th</sup>-century date (Fig. 20, Plate 19). It is virtually identical to the roof over Building B, and, like Building B it has a louvre extending the entire length of the ridge, both reasons for supposing that the two structures are roughly contemporary.

### Building E

On Henman’s plan this structure was divided into two areas, the boiler house to the south (G10) and the engine room to the north (G11), extending into Building C, through a now blocked archway. The walls of both the former engine room and the former boiler house abut Building C and must therefore be later. Both north and south walls of the boiler house have had two large full-height openings inserted into them leaving little in the way of details. The upper walls above these gaps are now supported by steel I-beams. At the east end of Building E the southeast corner of the engine room is executed in bullnose bricks. The north wall of the engine room retains blocked segmental-arched windows, visible from Building D (Plate 18).

Structurally, there is an echo of Building C in that there is a series of north-south aligned segmental-arched vaults, which are continuous across the two rooms. As in Building C, the vaults spring from iron/steel joists, but instead of being built of brick, are in fact of concrete, the wooden shuttering imprints being clearly visible.

### Building F

#### Ground Floor (Fig. 16)

Building F seems to have been an infilled area on the east side of the complex between buildings E to the west, D to the north, and G to the south. In 1897 it contained a mill

### First Floor (Fig. 17)

The north and south walls are of 9 ins x 4½ ins x 3 ins brick laid in English bond. At the west end of the room (F15) the wall steps out slightly, and there is a slight change in direction, to the west of which the brickwork changes to 8¾ ins x 3 ins laid in stretcher bond. This step marks the junction with Building E, and the independence of the two structures is emphasised by the concrete flooring in Building E and the wooden flooring in Building F.

### Building G

#### Ground Floor (Fig. 16)

In 1897, this area was occupied by a large store room (G7) at ground level, which was provided with a pair of windows to the west. The whole of the west wall has now been removed at this level and the wall above is supported on an I-beam. The same is true of the south wall with Building A. Little detail, then, survives. A blocked doorway at the west end of the north wall is an insertion. On the Henman plan, the eastern half of the north wall was open to Building F but this opening has been closed with breeze blocks. The ceiling is largely covered over but where the plasterboard was fallen away it has revealed a timber first floor (Plate 20).

#### First Floor (Fig. 17)

The upper storey of Building G (F11) was also lit towards the west by two windows, the southern one of which survives, while the northern one has been blocked with bricks. As shown in Henman's section (Fig. 10), they have segmental arches. The first floor itself comprises a single room, part of the modelling shop in 1897, but at a lower level than the first floor in Building A, and presumably from a different phase. The first floor room is open to the roof and has two later 19<sup>th</sup>-century timber roof trusses comprising tie beams, short principals carrying two pairs of plank purlins, and queen struts bolted to the tie beam and clasping a collar (Plate 21).

## **7.0 Interpretation**

### Chronology

The site at Nos 37-45 Commercial Street was first developed as a foundry in the 1850s appearing on the Board of Health map as a courtyard building occupying the eastern half of the present study area. Comparison of the dimensions and layout of these early buildings, as depicted on the map, and those of the present complex, suggest that the existing arrangement was to some degree determined by the original plan, and it is possible, though not proven, that elements of the 1850s buildings may have been incorporated into the later works.

Thus, the western side of the 1850s buildings seem to have approximated to the position of the western wall of the office block within Building A. This wall seems to appear on the 1889 map as an internal division, and it possible that the existing wall belongs to the early foundry. It may be significant that this wall contains a pair of blocked windows at ground level, though, as they appear on Henman's plan, it is



possible too that they date from the 1890s, and were used to monitor the goings on of the adjacent despatch warehouse.

On the east side of the complex, the east range containing the feed room, loose box and harness room appears to correspond with the width of the 1850s east range, so the design of the earlier range may have influenced the later range and may even incorporate some of the earlier fabric. The latter is certainly likely to be true of the eastern perimeter wall, and the existing covered courtyard must represent the area occupied by the southeast corner of the 1850s courtyard.

All the existing buildings, however, appear to date from the second half of the 19<sup>th</sup>-century. Regarding the structural sequence, there is some reason to suppose that Building C is the earliest, and that it may have been built as part of a second phase of foundry buildings. It was followed by Building E, and then buildings C and D in fairly close succession. It is possible, though again not proven, that all these buildings appear on the 1889 map. Building G, the former storeroom shown on Henman's plans, is also of late 19<sup>th</sup>-century date, but it does not seem to appear on the 1889 map, and is therefore likely to have been constructed for the Adamant Company. Building A, in its current manifestation, is the latest of the elements make up the former Adamant Co. works, but this probably incorporates earlier elements.

### Function

If the 1889 map depicts some of the existing buildings, that is to say, buildings B, C, D and E, then they must have been intended for the foundry. Either Building B and or Building D, with their spacious single-storey interiors and full length ridge louvers, could have functioned as a foundry. The purpose of Building C is less obvious, though its brick vaulting seems designed to take a heavy weight, or to provide fire proofing. The open arcade towards the west would have meant that the ground storey was very exposed to the elements, unless it were built against an existing single-storey building, or it was provided with a canopy. No evidence has been recovered to suggest this, but the front of the structure has been obscured by later additions, so the possibility cannot be ruled out. The large open plan layouts of the three storeys suggest workshops of some kind.

Regarding the question of how the Adamant works functioned, Henman's plans are invaluable for the information they give about the use to which individual buildings were put. Building D, which contained the sand mill as well as furnaces, would have been used for the preparation of aggregate for the manufacture of concrete, and perhaps also for the manufacture of cement. Materials would have been supplied by canal via Worcester Wharf. This building was provided with direct access to the Packing Warehouse in Building B via Building C, so it is possible that some products were manufactured here for immediate dispatch. There was a second mill south of the east end of Building D (in Building F) which would also have been used in the preparation of materials. There was access from both these buildings to the open courtyard and from thence to the mixing mill housed in Building C. It was presumably here that the cement and aggregates were mixed to produce cast products, power being provided by the engine and boiler housed in Building E. The west and southwest parts of the complex were given over to warehousing with a loading bay

## Construction Technology

One of the main interests of the complex is as an illustration of evolving construction technology in the latter half of the 19<sup>th</sup> century. First in the sequence is Building C in which we have partial steel framing, made up of the columns of the eastern arcade and the first-floor joists which are bolted to specially designed flanges at the heads of the columns. The joists thereby provide imposts for the support of a series of transverse vaulting bays. This arrangement seems to have influenced the stratigraphically later Building E in which steel joists were also used to carry a number of transverse vaults. The difference lies in the use of brick for the vaults of Building C, and concrete for the slightly later vaults of Building E. If the materials are different, the technology is not dissimilar, in that centring and shuttering must have been used in both cases.

From buildings C and E, it is, perhaps, only a slight leap to the concrete ceilings of Building A. Just as the joist supported the vaults in buildings C and E, so did the networks of iron/steel joists in Building A support not concrete vaulting but concrete panels. Of course, in contrast to the vaults, which were constructed *in situ* in traditional fashion, the panels must have been pre-cast before being slotted into position. The resultant ceiling provided a ready made system of shuttering on which to lay the concrete floor and roof. In Henman's drawings, only the roof is shown to have been of concrete, the ground and first floors being carried on wooden beams. Both the first floor and the roof were supported on several rows of columns, probably not unlike those that survive in the former stable. We cannot be certain as to the date of the concrete ceiling panels but if they date from the 19<sup>th</sup> century then they were probably part of Henman's alterations. The current system of steel I-beams and vertical supports evidently replaces the arrangement of columns and beams depicted by Henman, the I-beams occupying the same positions as the wooden beams. The date of this replacement is uncertain, but presence of what appear to be late 19<sup>th</sup>-century riveted I-section piers at the west end of Building A at ground floor level, could suggest that some of the steelwork at least may be attributed to Henman's remodelling.

### **8.0 Significance**

The former Adamant works, in conjunction with its near neighbour, Nos 25 to 29 Commercial Street makes a significant contribution to the historic streetscape in this part of Birmingham. Despite recent reconstruction of Building D's north wall, the north front provides visual historical context for the adjacent canal, and the south front towards Commercial Street is one of the few remaining links with the area's industrial origins.

As far as the industrial complex itself is concerned, despite the fabric having undergone substantial alteration, some important aspects of the 19<sup>th</sup>-century detail has been retained, notably, many of the roof structures, the arcade and vaulting of Building C, the concrete vaulting over Building E and the concrete ceilings and roof over Building A.

It is in the concrete in particular that the special significance of the complex lies, because a date in the 1890s would make this an early example of its use in

architecture, and endow the building with significance far beyond its aesthetic merits, or its industrial archaeological value. Technologically, it may be considered one of the key buildings in Birmingham's architectural development. Added interest is provided by the nature of the business being carried out here from c. 1889, that is to say, the manufacture of cement and concrete, which may make the early date more explicable.

## **9.0 Acknowledgements**

The project was managed for Birmingham Archaeology by Malcolm Hislop, who also led the fieldwork. Other staff included Eleanor Ramsey, who carried out the reflectorless total station survey of the Commercial Street elevation, Michael Lobb and Shane Kelleher who assisted with the photography, structural analysis and written description, and Elli Maaret Suntioinen who assisted with the documentary research; Nigel Dodds prepared the illustrations. The floor plans, sections and north elevation were based on a survey by Associated Architects. We are indebted to Toni Demidowicz for her observations about the structural and architectural character of the complex.

## **10.0 Sources Consulted**

### **10.1 Original Sources**

#### City of Birmingham Archives

BBP 10883 Shopping, Bateman and Bateman for Adamant Co. Ltd. April 1895 (Drawings missing)

BBP 13378 Additions to manufactory, William Henman for Adamant Co. October 1897 (Drawings missing, but copies supplied by the Birmingham Development Co. have been used in the preparation of this report)

MS 1542 (Bateman Archive), Box 43, Bundle 4, Floorsweepings bundle of correspondence, plans and papers, 1874-1909.

MS 1542 (Bateman Archive), Box 26, Bundle 15, Floorsweepings bundle of plans and papers c. 1842-1900.

#### Rate Books

St Thomas' Ward 1856, 1860, 1881, 1886, 1891, 1896

#### Trade Directories

*PO Directory of Birmingham* 1856

*Corporation Directory of Birmingham (Trades)* 1864

*Hulley's Birmingham Directory* 1870

*Kelly's Directory of Birmingham* 1868, 1883, 1884, 1886, 1888, 1890, 1897, 1907, 1911, 1917, 1927, 1930, 1932, 1937,

*Post Office Directory of Birmingham* 1845, 1856, 1860, 1864, 1882 (Part 1)

*White's Directory of Birmingham*, 1855

## **10.2 Secondary Sources**

Birmingham City Council 2006, *Former Adamant Co. Works, 37-45 Commercial Street, City Centre: Brief for Building Recording and Documentary Research.*

English Heritage 2006, *Understanding Historic Buildings.*

IFA 2001, *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings and Structures.*

Peters, J. E. C. 1988, 'Post-Medieval Roof Trusses in Some Staffordshire Farm Buildings', *Vernacular Architecture* 19, 24-31.

RCHME 1996, *Recording Historic Buildings: A Descriptive Specification*, 3<sup>rd</sup> edn.

Shill, R (2002) *Birmingham Canal Navigations – at the Heart of the British Canal Network*, Tempus, Stroud

White, A (2005) *The Worcester and Birmingham Canal*, Brewin Books, Studley

## **10.3 Cartographic Sources**

1731 Westley

1750 Bradford

1778 Hanson

1828 Piggot Smith

c.1860 Piggot Smith

1889 Ordnance Survey 1:500

1890 Ordnance Survey 1:2500

1904 Ordnance Survey 1:2500

1914 Ordnance Survey 1:2500

1937 Ordnance Survey 1:2500



Fig.1

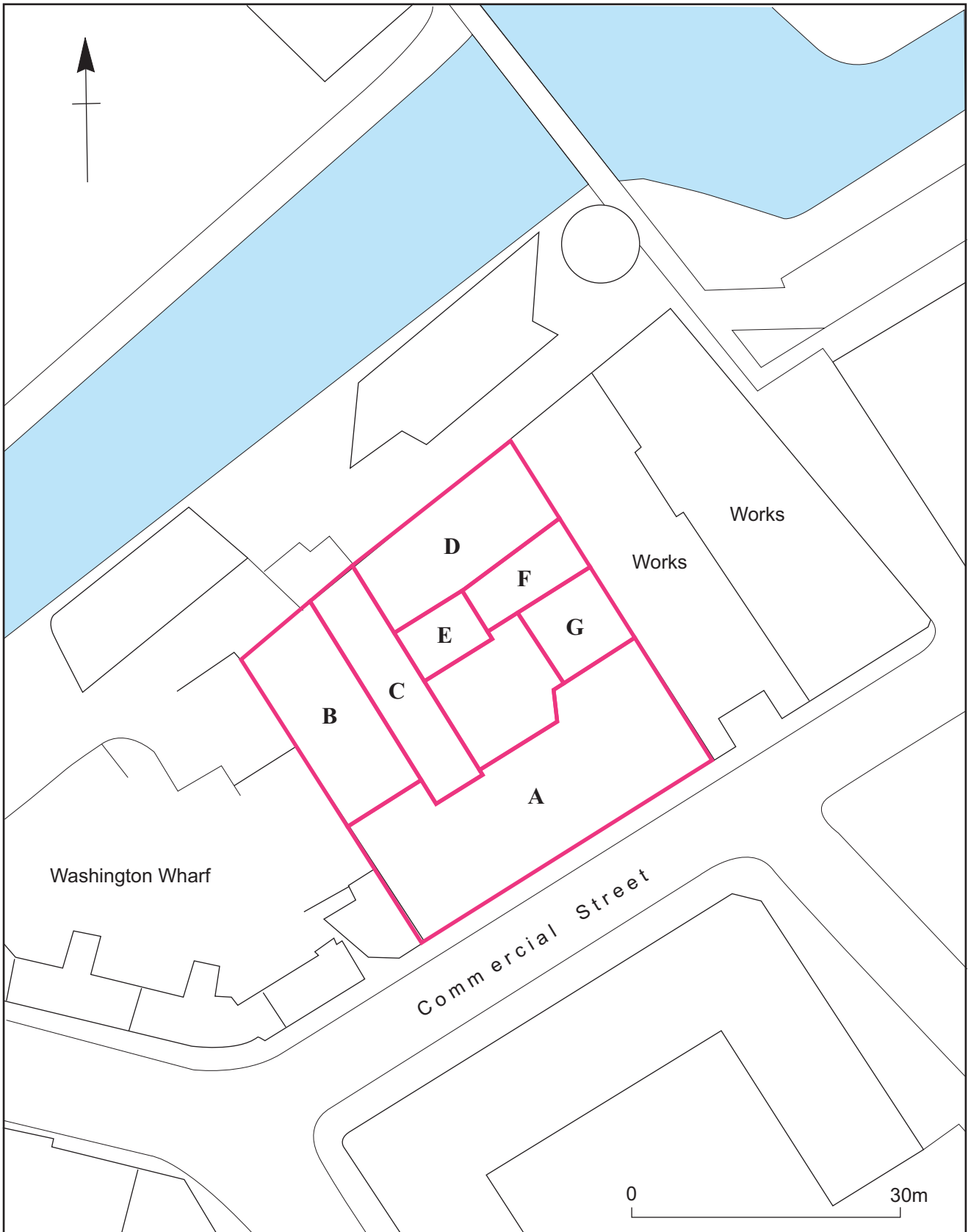


Fig.2

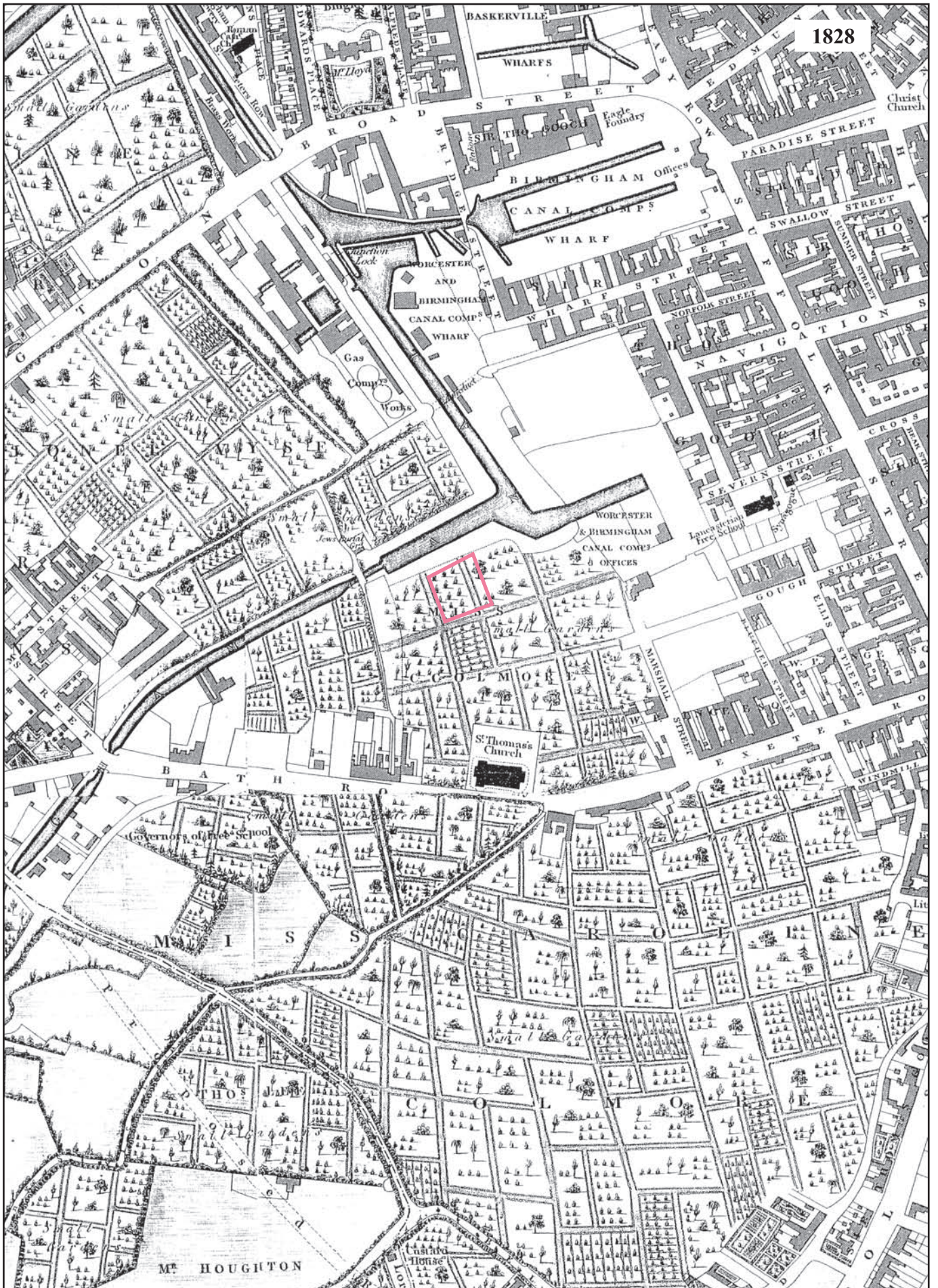


Fig.3

c.1860

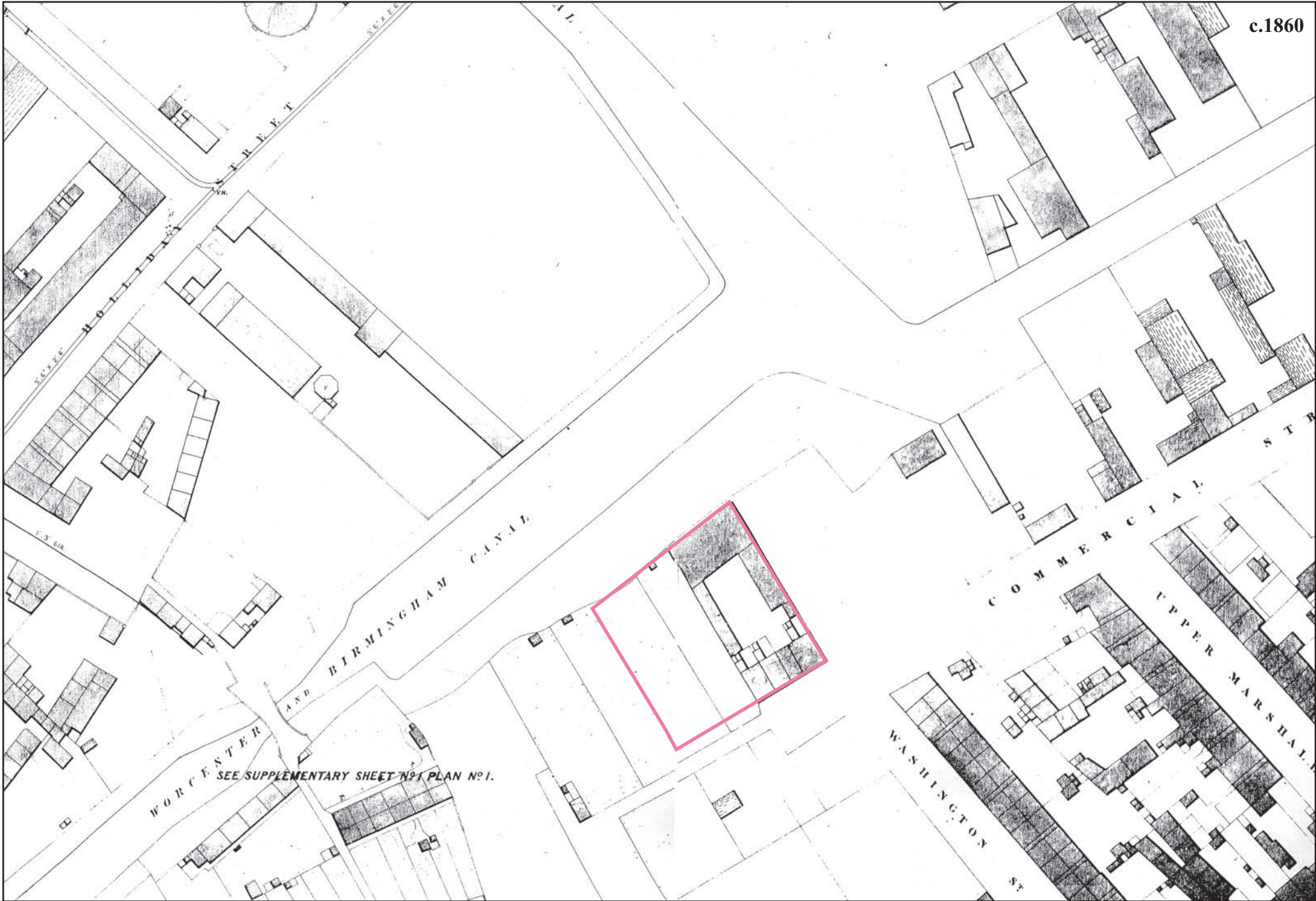


Fig.4

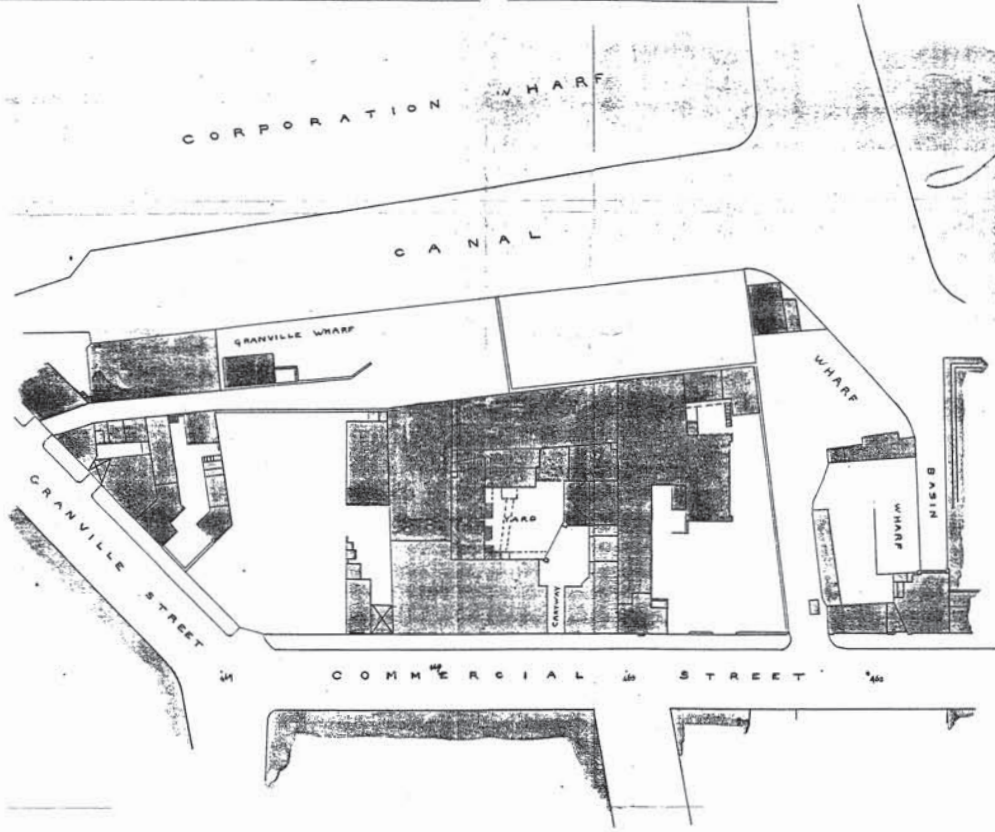




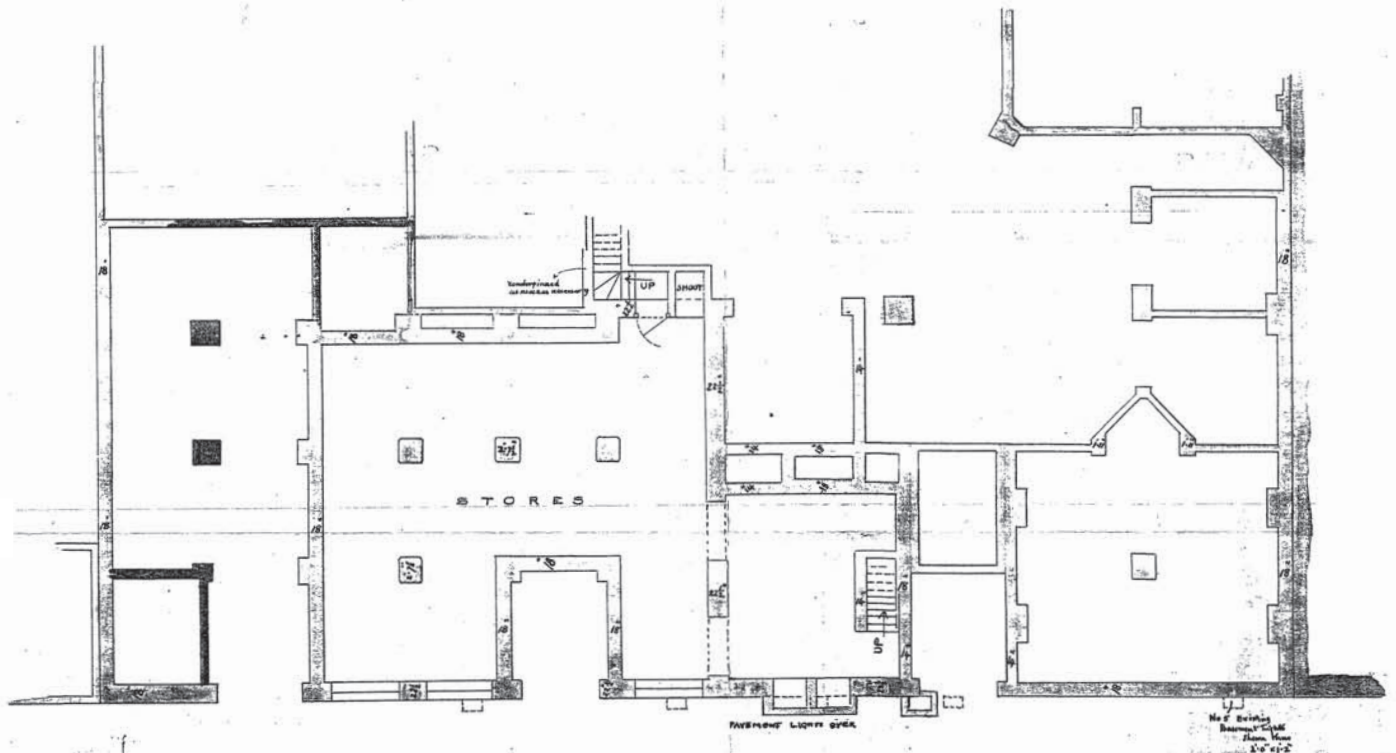
Fig.5

**THE BIRMINGHAM ADAMANT CO. LIMITED.**  
**COMMERCIAL STREET. BIRMINGHAM.**

**Nº1.**



**BLOCK PLAN**  
SCALE 41.66 FEET = 1 INCH



**BASEMENT PLAN.**  
SCALE 8 FEET = 1 INCH

MAY 1897

Fig.6

SCALE OF 10 20 30 40 50 60 70 FEET

WHARF

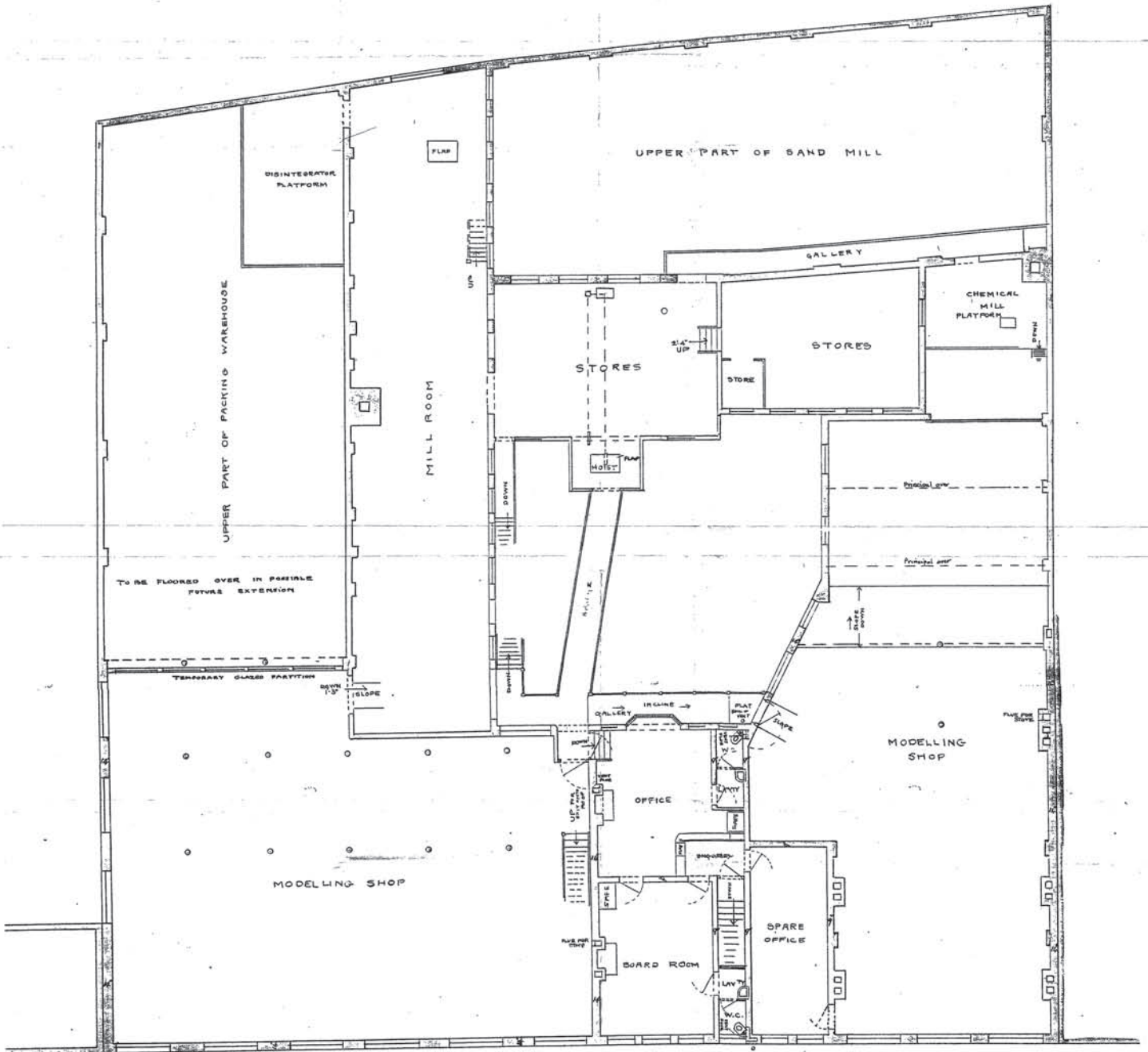
*John P. ...*



C O M M E R C I A L S T R E E T

GROUND FLOOR PLAN

Fig.7

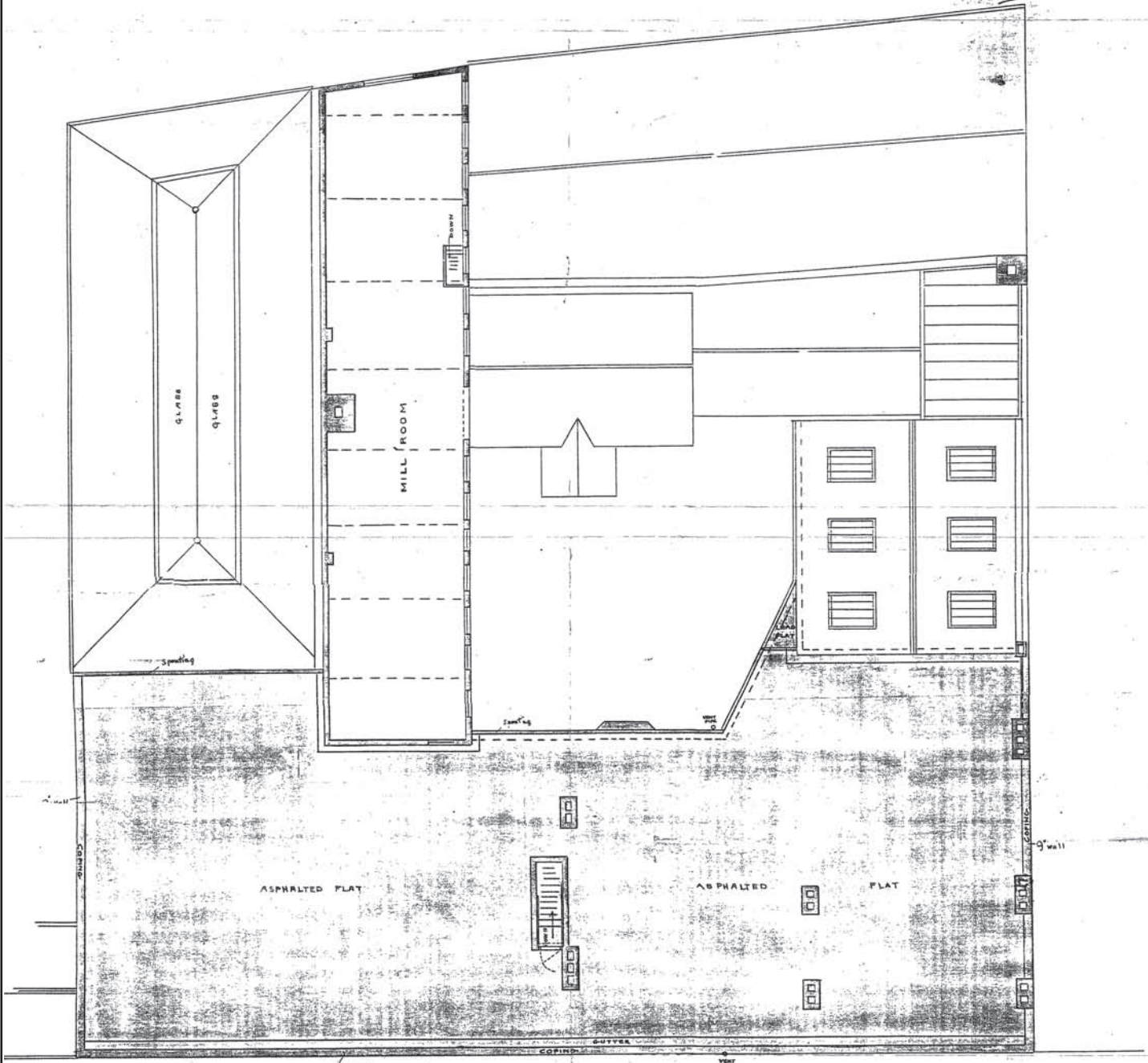


— FIRST FLOOR PLAN —

WILLIAM HENMAN REJER,  
3, CANNON STREET, LONDON

Fig.8

*John P. ...*  
*...*



**SECOND FLOOR AND ROOF PLAN**

**WILLIAM HENMAN, ARCHT.**  
31, CANNON STREET, S.W.M.

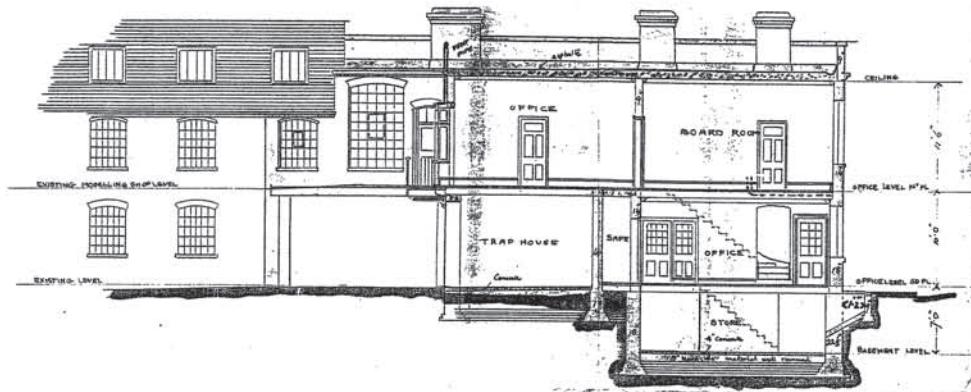
Fig.9

THE BIRMINGHAM ADAMANT CO. LIMITED.  
 COMMERCIAL STREET, BIRMINGHAM

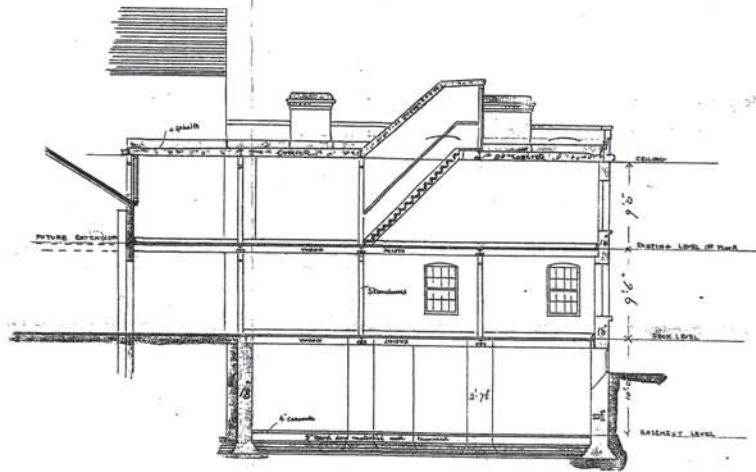
No 5

SCALE OF 10 5 0 10 20 30 40 50 60 70 FEET

13078  
 Commercial St.  
 J. P. ...  
 ...



SECTION ON LINE D-D



SECTION ON LINE A-B

Fig.10



Fig.11

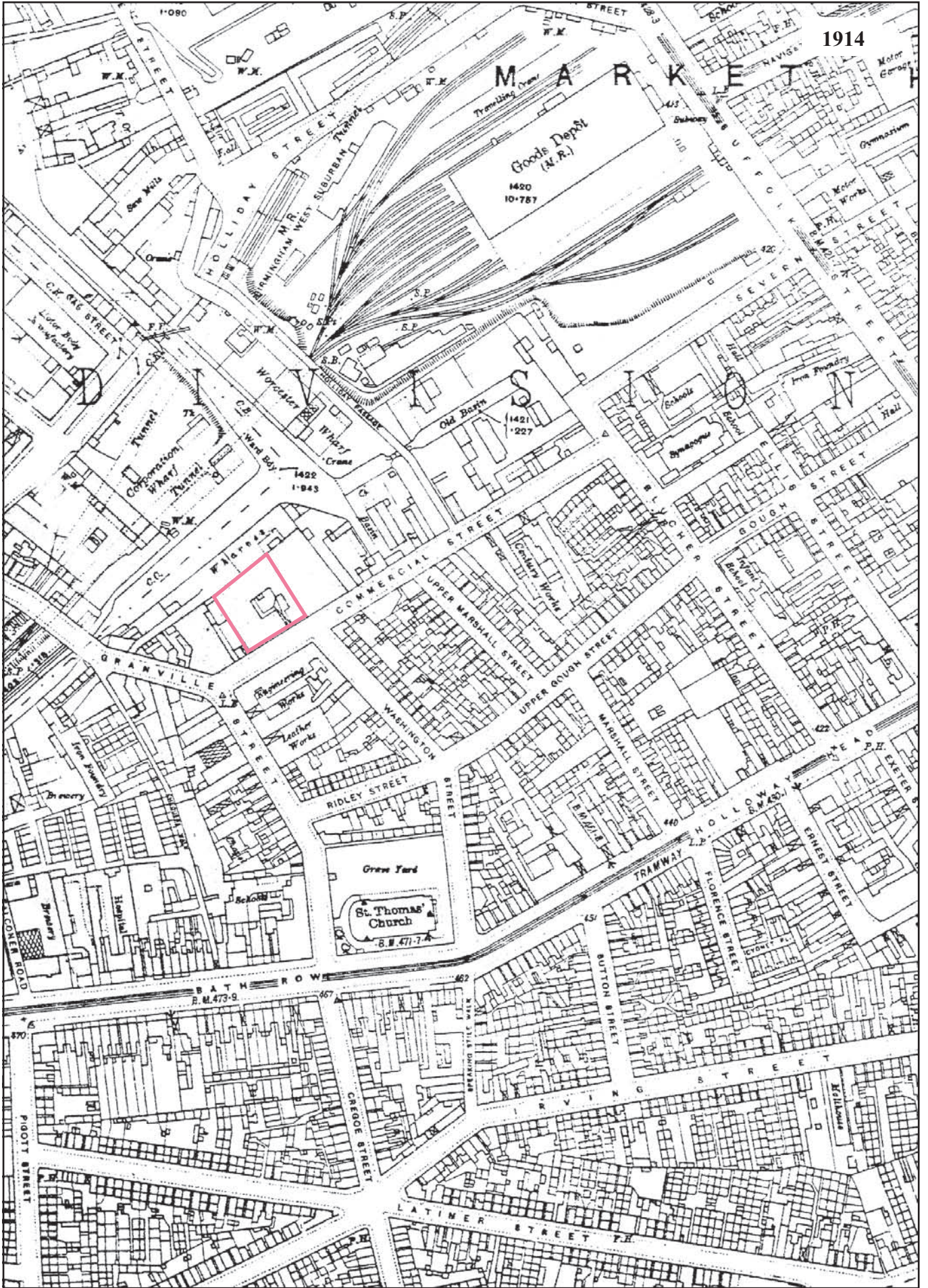


Fig.12



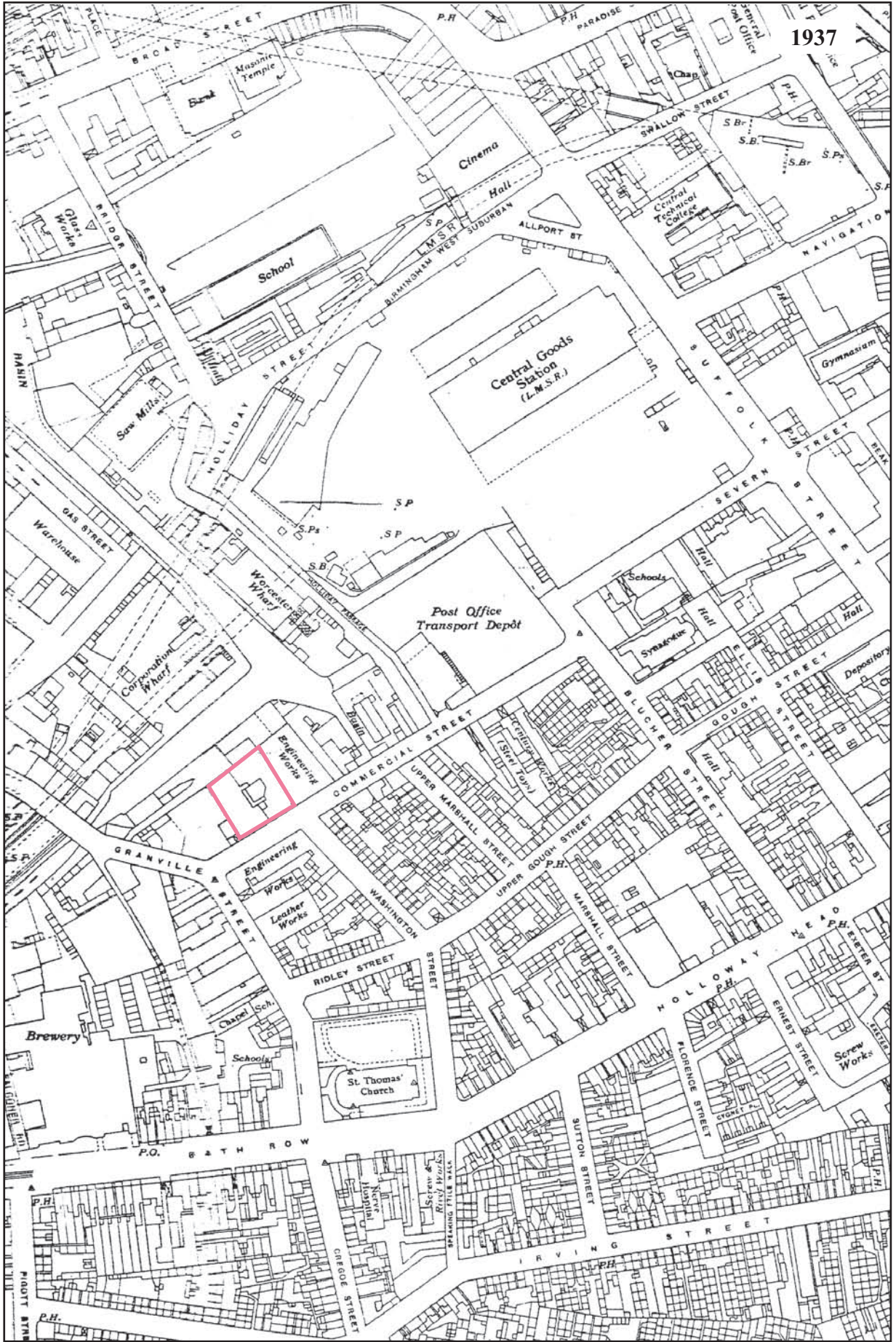


Fig.13

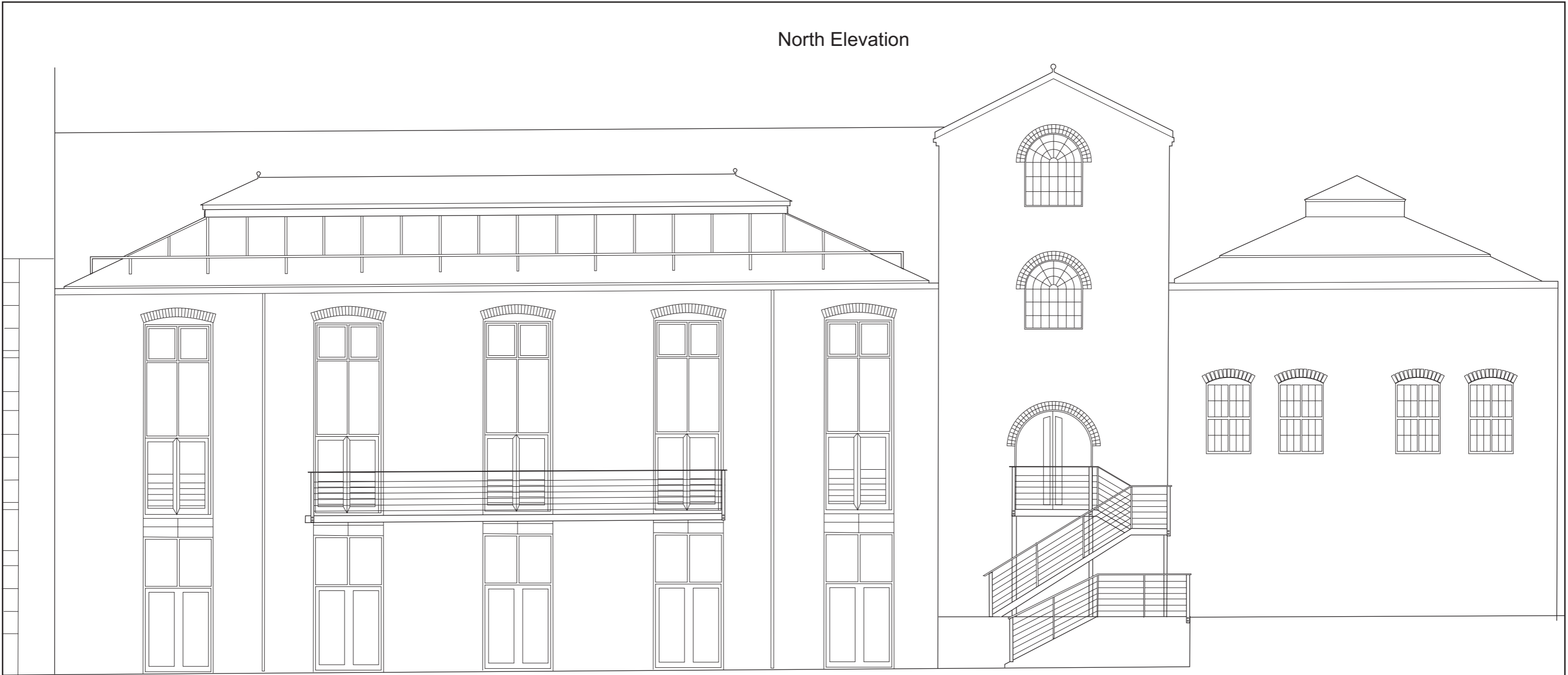
South Elevation



0 10m

Fig.14

North Elevation



0 10m

Fig.15

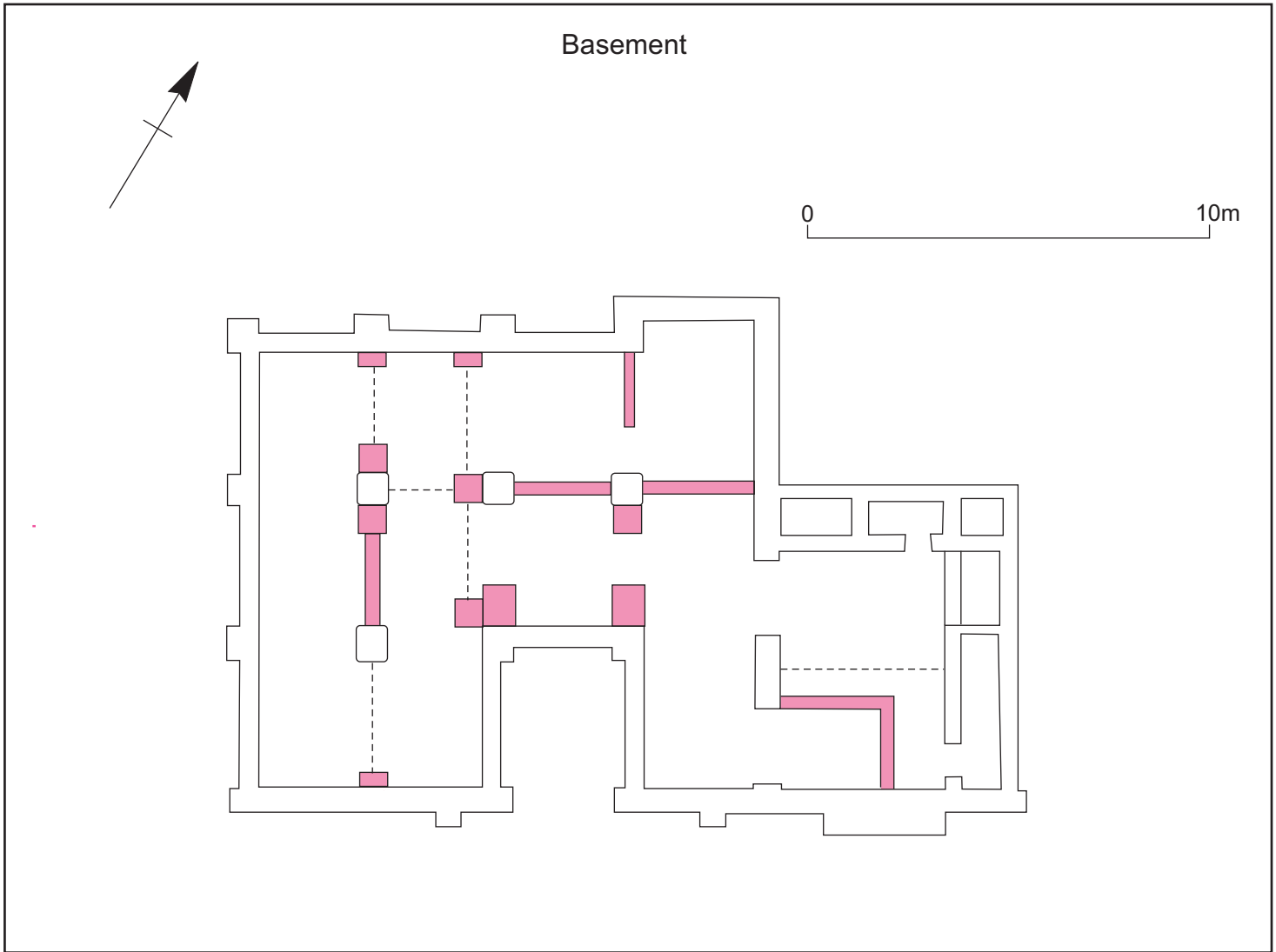


Fig.16

Ground Floor



0 20m

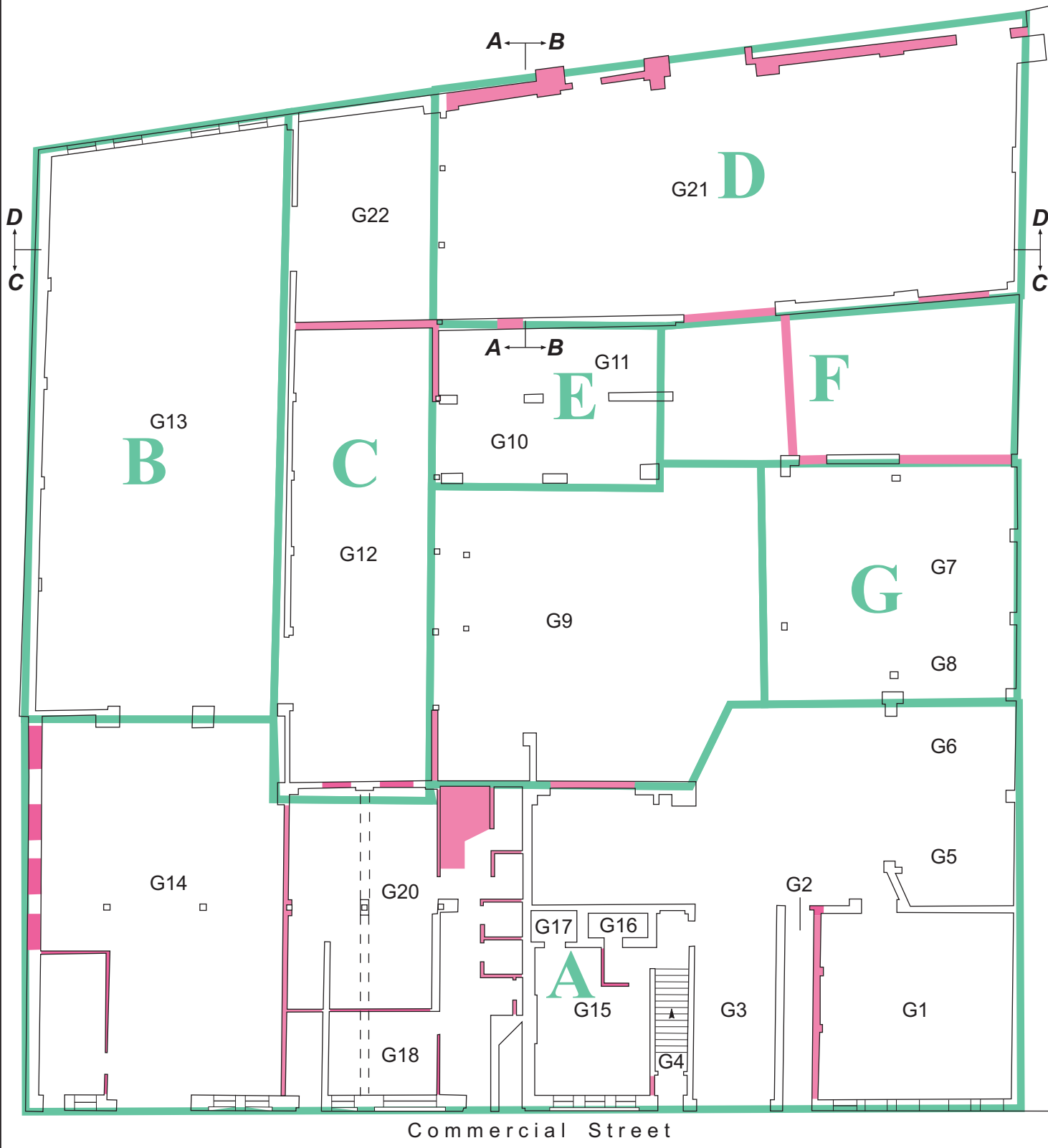


Fig.17

First Floor

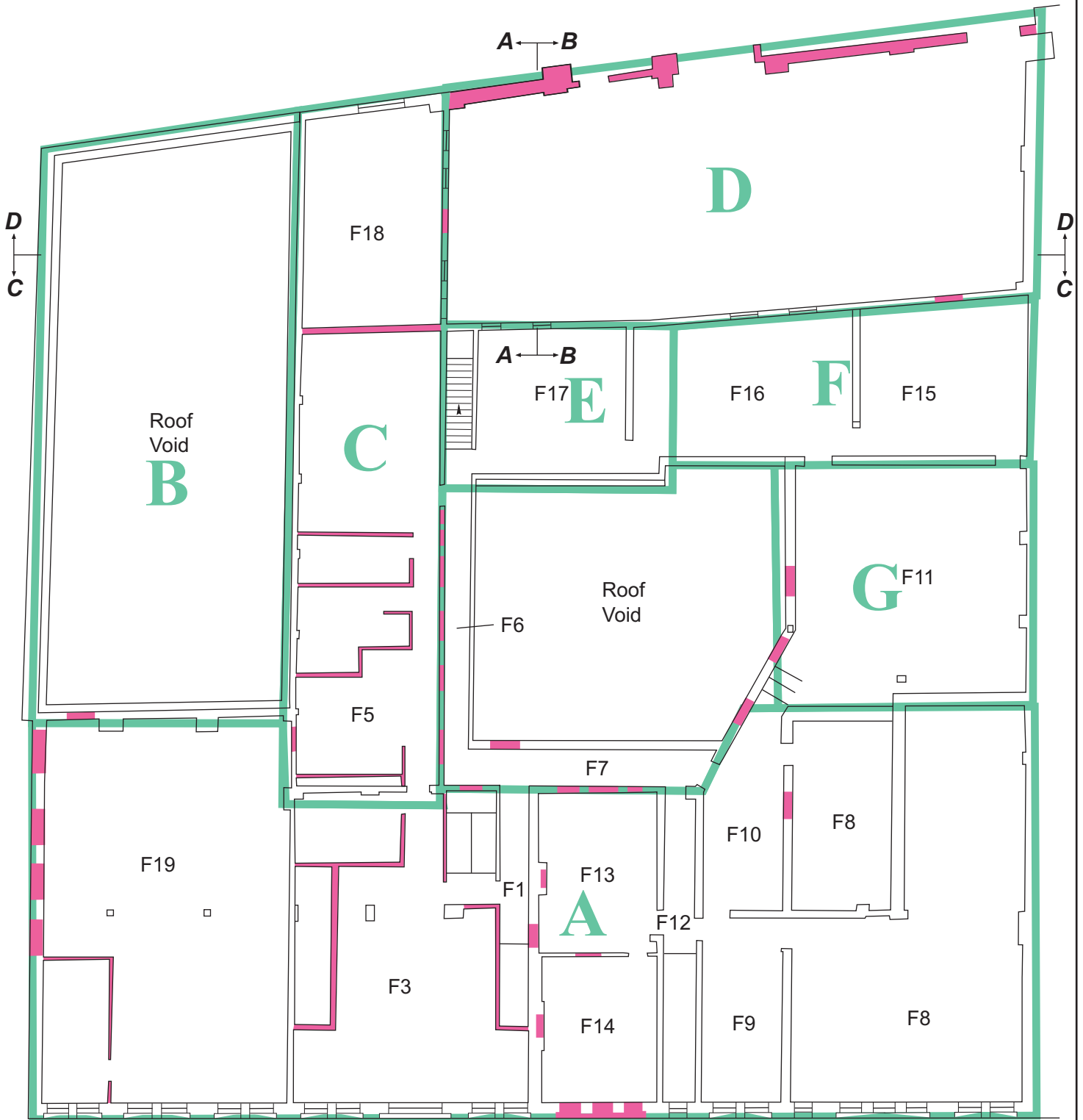


Fig.18

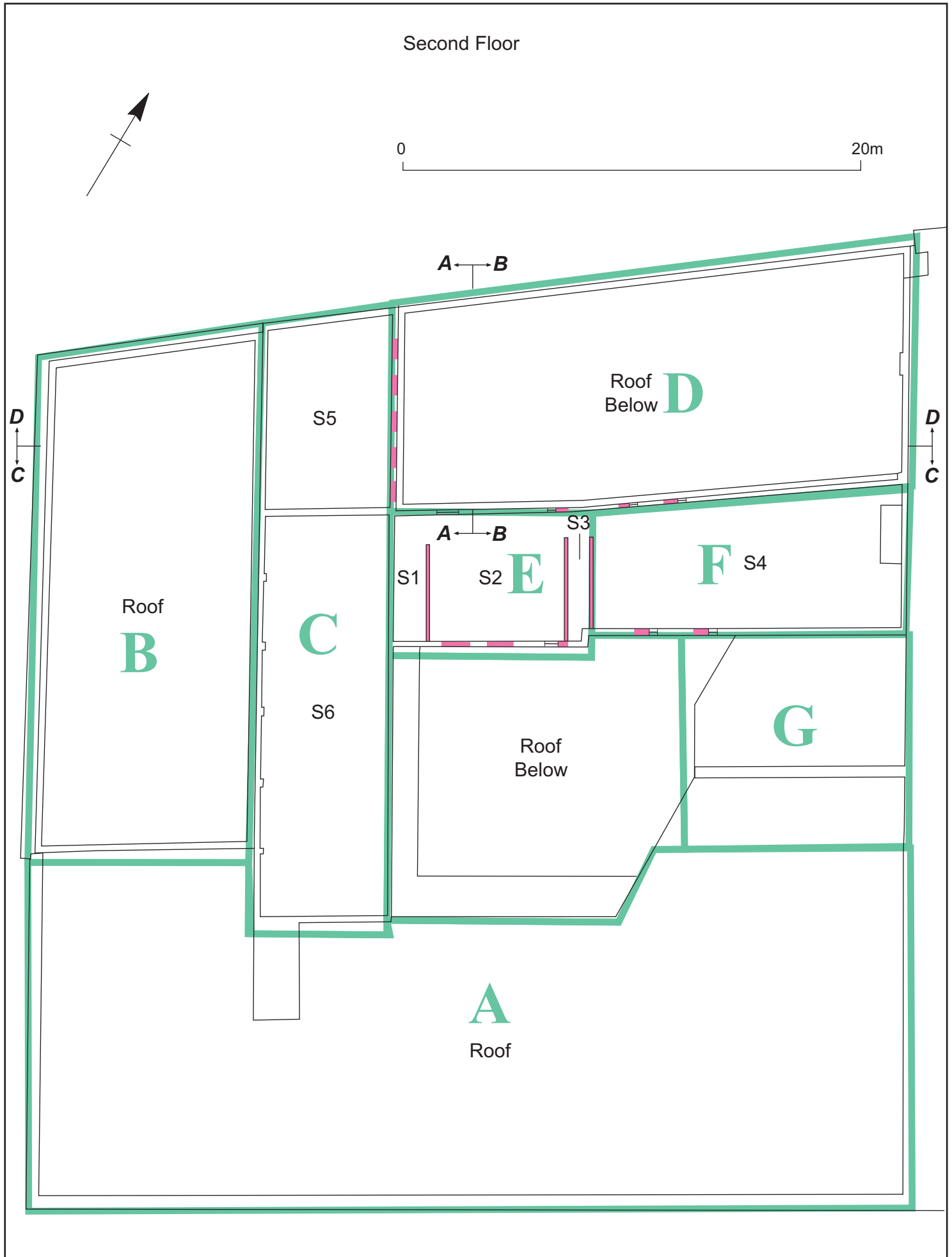
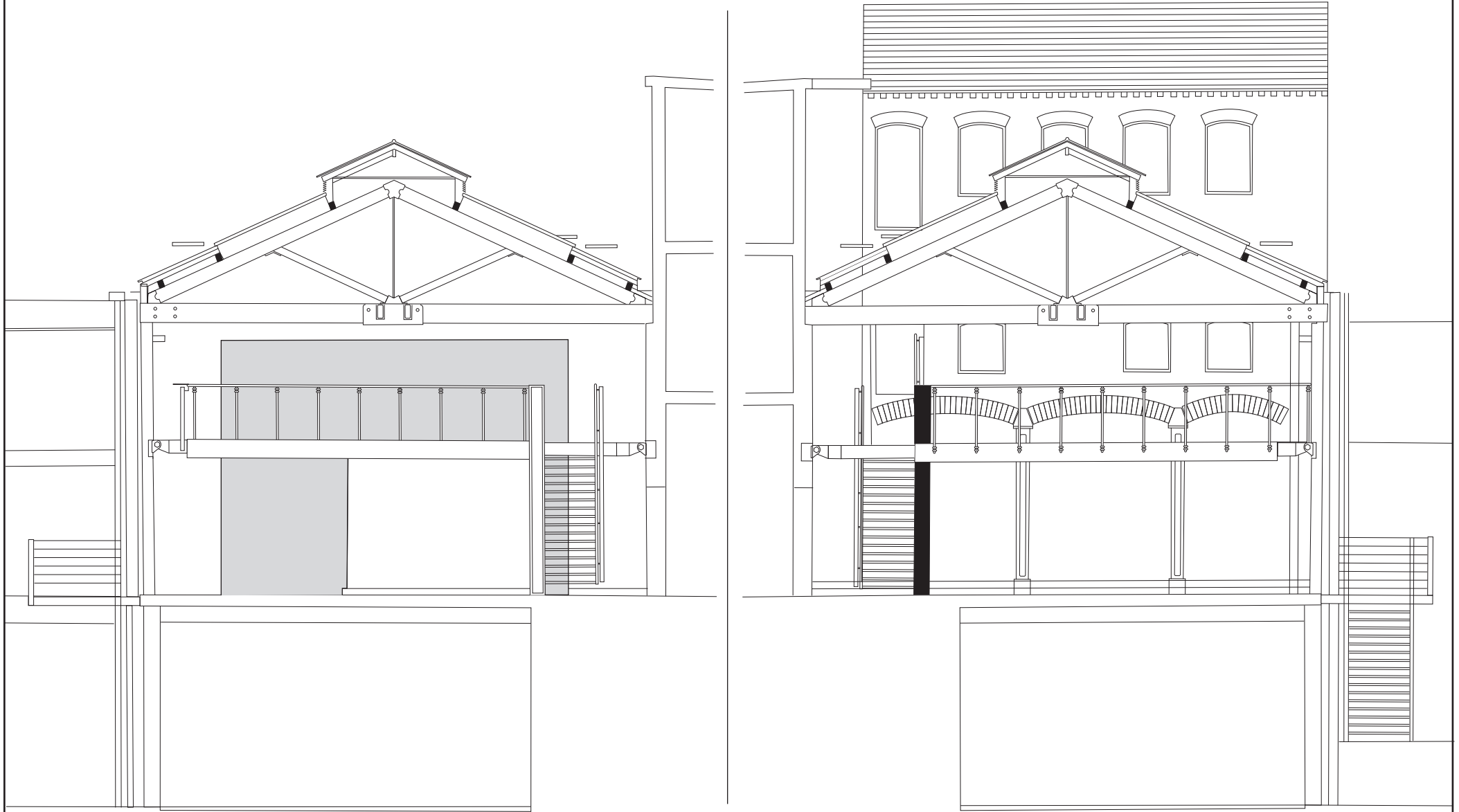


Fig.19

Section A

Section B



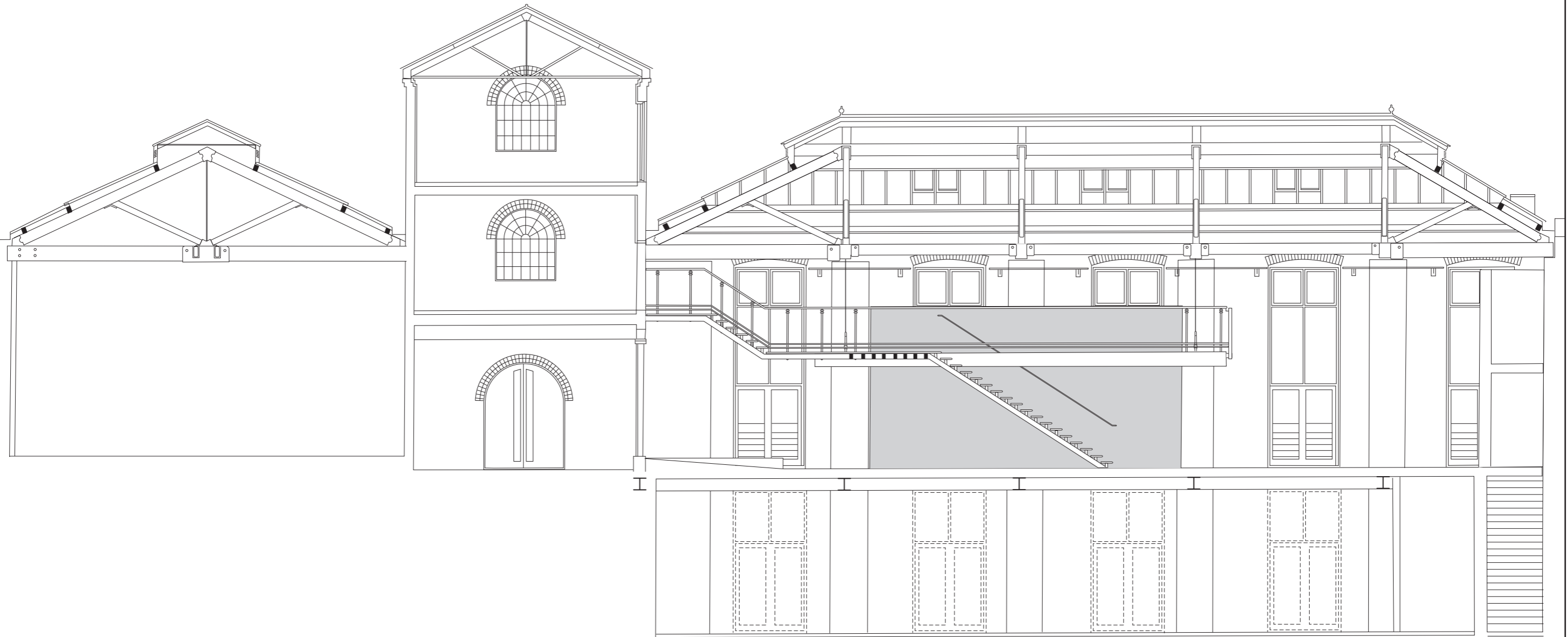
0

10m

Fig.20



Section C



0 10m

Fig.21

Section *D*

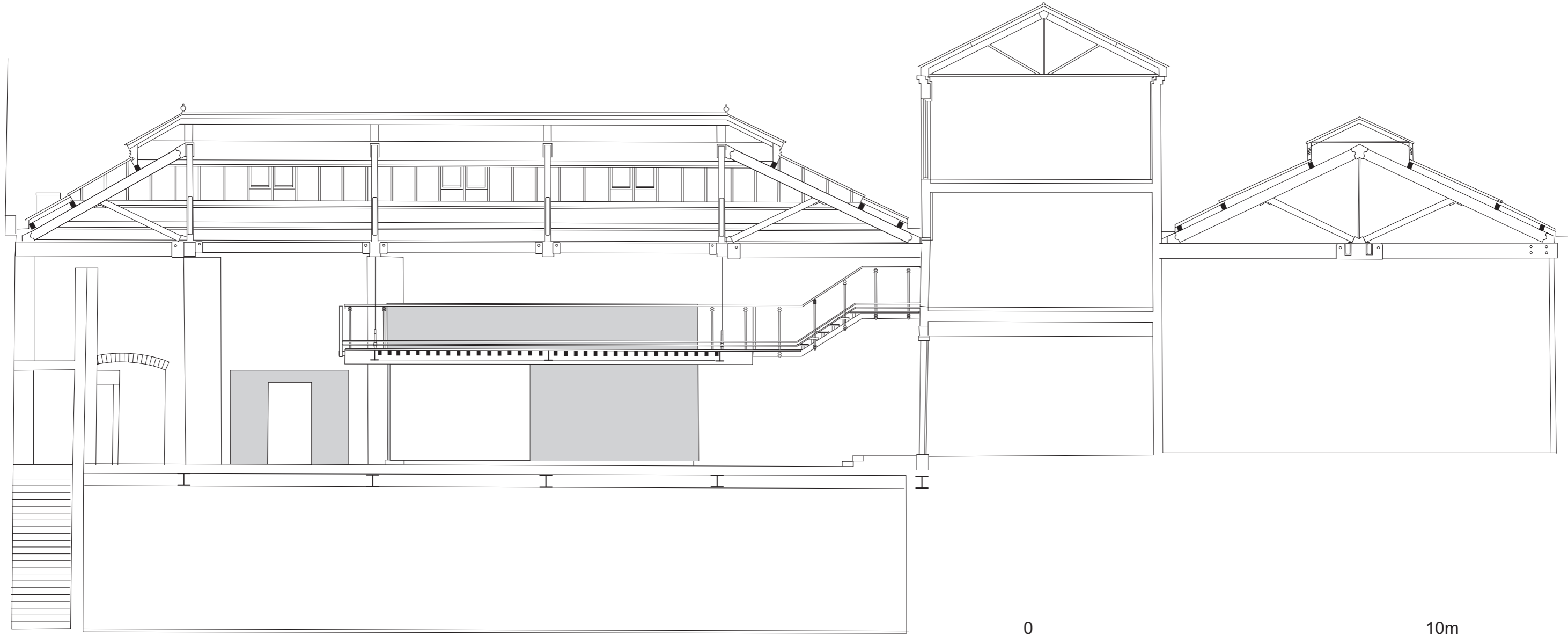


Fig.22



Plate 1



Plate 2



Plate 3



Plate 4



Plate 5



Plate 6



Plate 7



Plate 8



Plate 9



Plate 10



Plate 11



Plate 12



Plate 13



Plate 14



Plate 15



Plate 16



Plate 17



Plate 18



Plate 19



Plate 20



Plate 21